

Listing of Claims:

16. (Currently Amended) A An isolated proton-gated cation channel having the amino acid sequence of SEQ. ID NO: ~~1~~ 2 ~~or a variant of that sequence having at least 85% identity therewith.~~

17. (Currently Amended) A channel according to Claim 16, which forms a homopolymeric channel.

18. (Original) A channel according to Claim 16 in combination with another cation channel sub-unit which together form a heteropolymeric channel.

19. (Currently Amended) A channel according to Claim 18, wherein the other cation channel belongs to the degenerin/ENaC channel superfamily.

20. (Currently Amended) A channel according to Claim 18, wherein the other cation channel is a P2X ATP-gated channel.

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21. (Currently Amended) A channel according to Claim 20, wherein the other cation channel sub-unit ~~of~~ is a P2X2 ATP-gated channel ~~sub-unit~~.

22. (Original) A nucleic acid encoding a proton-gated cation channel as defined in Claim 16.

Claims 22 - 33 are withdrawn from consideration.

34. (Currently Amended) The channel of Claim 16 having at least 90% identity with the amino acid sequence of SEQ ID NO: ~~1~~ 2.

35. (Currently Amended) The channel of Claim 34 having at least 95% identity with the amino acid sequence of SEQ ID NO: ~~1~~ 2.

36. (Currently Amended) The channel of Claim 35 having at least 98% identity with the amino acid sequence of SEQ ID NO: ~~1~~ 2.

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37. (Currently Amended) The channel of Claim 36 having
at least 99% identity with the amino acid sequence of SEQ ID
NO: \pm 2.